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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/454,758	12/06/1999	PER JOHANSSON	040000-625	4205
21839	7590	09/30/2004	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P			NGUYEN, HANH N	
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ALEXANDRIA, VA 22313-1404			PAPER NUMBER	
			2662	

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/454,758

Applicant(s)

JOHANSSON, PER

Examiner

Hanh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 07/09/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Withdrawal of Finality

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6, 7, 8 and 12 are rejected under 35 USC 103(a) as being unpatentable over Cansever (US Pat. No. 6,678,252 B1) in view of Alvesalo et. al. (US pat. No. 6,650,655 B2).

In claim 1, Cansever discloses, in Fig.2, an Ad-hoc network 200 (a first ad-hoc network) comprising NODE i (a first terminal) receiving a bandwidth request from a neighbor node J=4 (second terminal), wherein node J=4 is moving from within network 200 as described in Fig.1, col.1, lines 35-50. Fig.4 describes that NODE i (the first terminal) compares the requested bandwidth to its maximum available bandwidth (MAB_i) (compares the capacity allocation of the first terminal to the capacity allocation of the second terminal). If the requested bandwidth is less than or equal to the maximum available bandwidth (determining if the first terminal has sufficient available capacity to accommodate the request), the request is granted (satisfying the capacity request). See col.7, lines 40-50 & lines 20-30. Cansever does not disclose the capacity request is from second terminal in the second ad-hoc.

Alvesalo et al. discloses in the Abstract resources allocation between networks as follow: a network is allocated a minimum capacity. As the capacity requirement increases, an additional capacity is allocated by borrowing from capacity allocated to another network (capacity allocation between different networks). Therefore, it would have been obvious to one ordinary skill in the art to modify the node I (first terminal) in network 200 to receive a capacity request from another terminal in another network . The motivation of the achievement is to increase capacity allocation (modifying capacity) when a new ad-hoc network joins the existing ad-hoc network, or to decrease the capacity allocation when a joining ad-hoc network leaves an existing network.

In claim 6, **Cansever** discloses, in Fig.4, node i (a first terminal) grants the request to node $J=4$ (second terminal) when requested bandwidth is less than or equal to the maximum available bandwidth of node i (modifying the first terminal 's capacity allocation to accommodate the request from the second terminal). See col.7, 40-50.

In claim 7, **Cansever** discloses node i (a first terminal) transmits to the requesting node $J=4$ (a second terminal) a reply packet (a data message) which reserves the requested bandwidth (transmitting a data message from the first terminal to the second terminal indicating that the request has been accommodated). See col.7, lines 50-55.

In claim 4, **Cansever** discloses, in Fig.4, if the requested bandwidth is greater than the maximum available bandwidth (MAB_i), the request is denied (data message indicating rejecting the request). See col.7, lines 47-52.

In claim 12, most of limitations of this claim have been addressed in claim 1 except that **Cansever** does not disclose a request from at least one additional terminal is received in the first

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terminal. **Cansever** further discloses that when a current node (terminal) is not usable, its resource is released and a new node (an additional terminal) is established with a new resource. See col.7, lines 60-67. Therefore, it would have been obvious to one ordinary skill in the art to consider the new node with new allocated resource of **Cansever** as one additional terminal so that the node ₁ (first terminal) may receive a request from the additional terminal in order to save network resource.

In claim 8, the limitation of this claim has been addressed in claim 12.

Claims 9, 10, 13 and 14 are rejected under 35 USC 103(a) as being unpatentable over **Cansever** (US Pat. No. 6,678,252 B1) in view of **Alvesalo et al.** (US Pat. No. 6650655 B2) and further in view of **Scheurich** (US Pat. No. 5,848,266).

In claim 9, **Cansever** discloses, in Fig.2, an Ad-hoc network 200 (a first ad-hoc network) comprising NODE i (a first terminal) receiving a bandwidth request from a neighbor node J=4 (second terminal), wherein node J=4 is moving from within network 200 as described in Fig.1, col.1, lines 35-50. Fig.4 describes that NODE i (the first terminal) compares the requested bandwidth to its maximum available bandwidth (MAB_i) (compares the capacity allocation of the first terminal to the capacity allocation of the second terminal). If the requested bandwidth is less than or equal to the maximum available bandwidth (determining if the first terminal has sufficient available capacity to accommodate the request), the request is granted (satisfying the capacity request). See col.7, lines 40-50 & lines 20-30. **Cansever** does not disclose the capacity request is from second terminal in the second ad-hoc and the request including a digital representation of the second terminal 's capacity allocation.

Alvesalo et al. discloses in the Abstract resources allocation between networks as follow: a network is allocated a minimum capacity. As the capacity requirement increases, an additional capacity is allocated by borrowing from capacity allocated to another network (capacity allocation between different networks).

Scheurich discloses, in Fig.1, a request for bandwidth from an agent (a second terminal) comprising a digital presentation (request including a digital representation of the second terminal 's capacity allocation). See col.3, lines 27-30.

Therefore, it would have been obvious to one ordinary skill in the art to modify the node I (first terminal) in network 200 to receive capacity requests from another terminal in another network send capacity request in digital format from a second terminal from a different ad-hoc network by using the digital representation of **Scheurich** into the **Cansever**. The motivation is to modify bandwidth available in one network such as allocating or releasing bandwidth to the another network as needed.

In claim 13, most of limitations of this claim have been addressed in claim 1 except that **Cansever** does not disclose a request from at least one additional terminal is received in the first terminal. **Cansever** discloses that when a current node (terminal) is not usable, its resource is released and a new node (an additional terminal) is established with a new resource. See col.7, lines 60-67. Therefore, it would have been obvious to one ordinary skill in the art to consider the new node with new allocated resource of **Cansever** as one additional terminal so that the node 1 (first terminal) may receive a request from the additional terminal in order to save network resource.

In claims 10 and 14, **Cansever** discloses, in Fig.2, Ad-hoc networks 202 and 204 (a

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first and a second ad-hoc networks). NODE i (a first terminal) in the Ad-hoc network 202 (in the first ad-hoc network) receiving a bandwidth request from one of neighbor nodes $J=1-4$ (second terminal), wherein node $J=4$ (a second terminal) is within both networks 202 and 204 (a second Ad-hoc network 204) as described in Fig.1, col.1, lines 35-50. Fig.4 describes that NODE i (the first terminal) compares the requested bandwidth to its maximum available bandwidth (MAB_i) (compares the capacity allocation of the first terminal to the capacity allocation of the second terminal). If the requested bandwidth is less than or equal to the maximum available bandwidth (determining if the first terminal has sufficient available capacity to accommodate the request), the request is granted (satisfying the capacity request). See col.7, lines 40-50 & lines 20-30.

Cansever further discloses, in Fig.5, a memory 502 (a memory module) containing a program for calculating maximum available bandwidth of node i (digital representation of the first terminal's capacity allocation); a processor 504 (a processor module) coupled to memory 502 that runs the program in memory 504 (a processor operative associated with memory module). See col.8, lines 5-20.

Cansever does not disclose the request including a digital representation of the second terminal's capacity allocation; and the processor module comparing the first terminal's capacity allocation with the second terminal's capacity allocation to satisfy the request.

Since **Cansever** disclose in the method above wherein node i compares the requested bandwidth to its maximum available bandwidth (MAB_i) (compares the capacity allocation of the first terminal to the capacity allocation of the second terminal). If the requested bandwidth is less than or equal to the maximum available bandwidth (determining if the first terminal has

sufficient available capacity to accommodate the request), the request is granted (satisfying the capacity request). See col.7, lines 40-50 & lines 20-30. Therefore, the processor 504 that runs the program in the memory 502 must executes the functions of comparing the first terminal 's capacity allocation with the second terminal 's capacity allocation to satisfy the request

Scheurich discloses, in Fig.1, a request for bandwidth from an agent (a second terminal) comprising a digital presentation (request including a digital representation of the second terminal 's capacity allocation). See col.3, lines 27-30.

Therefore, it would have been obvious to one ordinary skill in the art to send capacity request in digital format from a second terminal from a different ad-hoc network by using the digital representation of **Scheurich** into the **Cansever**. The motivation is to modify bandwidth available in one network such as allocating or releasing bandwidth to the another network as needed.

Claims 2 and 3 are rejected under 35 USC 103(a) as being unpatentable over **Cansever** (US Pat. No. 6,678,252 B1) in view of Alvesalo (Patent No. 6650655 B2) and further in view of **Robinson et al.** (US Pat. No. 6,122,291).

In claims 2 and 3, **Cansever** does not disclose parameter represents priority class of desired capacity allocation, and capacity allocated by the first terminal to priority class lower than and equal to the priority class parameter in the request from the second terminal. **Robinson et al.** discloses the capacity allocated to requesting terminals is based on priority and capacity available of the system. A remote terminal of relatively high priority is always assigned its maximum bandwidth (request from a second terminal represents priority class of desired

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capacity allocation), whereas another remote terminal of relatively lower priority is dynamically assigned a varying bandwidth based upon system arbitration (capacity allocated by the first terminal to priority class lower than the priority class parameter in the request from the second terminal). See col.4, lines 25-45. Therefore, it would have been obvious to one of ordinary skills in the art to modify the **Cansever** by using the priority features of **Robinson** to assign a requesting terminals maximum capacity based upon its priority and maximum available bandwidth of the system. The motivation of the combination is to achieve quality of service based on assigning high priority terminals with maximum bandwidth while lower priority terminals are assigned variable bandwidth if the remaining capacity of the system is available.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 6-14 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 5 and 11 are allowed over the prior art. The reason for allowance have been addressed in the Office action mailed on 4/9/03.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morris et al.(US pat. No. 6,691,173) discloses Distributed Management of an Extended Network Containing Short Range Wireless Links.

Cannon et al. (US Pat. No. 6,650,871 B1) discloses Cordless RF Range Extension for Wireless Piconets.

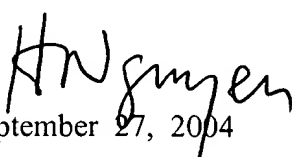
Hong et al. (US Pat. No. 5,844,900) discloses Method and apparatus for Optimizing a medium Access Control protocol.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 703 306-5445. The examiner can normally be reached on Monday-Friday from 8:AM to 5PM. The examiner can also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 703 305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh Nguyen


September 27, 2004